

In the Claims:

Please amend the claims as follows:

Please cancel claims 1-18 and add new claims 19-42.

1-18. (Canceled)

19. (New) A method of producing laterally integrated semiconductor components, comprising the steps of:

applying at least one first semiconductor component on an epitaxial substrate;  
layering a hydrogen fluoride soluble mask over said at least one first semiconductor component and said substrate, said mask defining one or more windows to said substrate; and  
applying at least one other semiconductor component in at least one of said one or more windows.

20. (New) The method according to claim 19, wherein said mask includes at least one thinner mask portion where said one or more windows are to be defined and at least one thicker mask portion covering said at least one first semiconductor component, and wherein said step of layering comprises removing at least said at least one thinner mask portion so as to expose said one or more windows.

21. (New) The method according to claim 19, wherein each of said steps is performed within an epitaxy reactor.

22. (New) The method according to claim 21, further comprising initially cleaning said substrate within said epitaxy reactor by corrosion of any hydrogen fluoride soluble layers through introduction of at least one fluoride based compound.

23. (New) The method according to claim 19, wherein said step of layering comprises layering N mask layers over said first semiconductor component and said substrate, wherein each of said N mask layers defines at least one window to one or more from a group consisting of an

underlying mask layer and said substrate, wherein said mask defines at least one first window to said substrate, wherein N is a natural number, and wherein said step of applying at least one other semiconductor component comprises applying at least one second semiconductor component in said at least one first window.

24. (New) The method according to claim 23, said method further comprising:  
etching at least one of said N mask layers by use of an etchant, such that at least one second window to said substrate is defined; and  
repeating said step of applying at least one other semiconductor component to apply at least one third semiconductor component in said at least one second window.

25. (New) The method of according to claim 24, further comprising:  
repeating said etching step and said step of applying at least one other semiconductor component alternately until at least one Nth window to said substrate is defined and at least one (N+1)th semiconductor component is applied in said at least one Nth window.

26. (New) The method according to claim 25, wherein after said at least one (N+1)th semiconductor component is applied in said at least one Nth window, any remaining mask layers are removed by etching.

27. (New) The method according to claim 25, wherein at least said etching step is performed within an epitaxy reactor.

28. (New) The method according to claim 27, wherein said etching step includes introduction of an etchant containing fluoride into said reactor.

29. (New) The method according to claim 28, said etchant comprises an unstable fluoride combination which disintegrates into hydrogen fluoride within said reactor.

30. (New) The method according to claim 19, wherein said first semiconductor

component is an electrical component and said other semiconductor component is an optoelectrical component.

31. (New) A method for producing laterally integrated semiconductor components comprising the steps of:

applying a mask comprising N masking layers on an epitaxial substrate, wherein each of said N masking layers defines one or more windows for later application of at least one other semiconductor component, wherein said mask defines at least one first window to said substrate, and wherein N is a natural number;

applying at least one first semiconductor component on said substrate in said at least one first window; and

etching by use of an etchant at least one of said N masking layers to expose at least one other window to said substrate;

applying at least one other semiconductor component in said at least one other window; and

if necessary, repeating said steps of etching at least one of said N masking layers and applying at least one other semiconductor component until at least one Nth semiconductor component is applied in at least one Nth window.

32. (New) The method according to claim 31, wherein after said at least one Nth semiconductor component has been applied, any remaining mask is removed by etching.

33. (New) The method according to claim 31, wherein each of said steps is performed within an epitaxy reactor.

34. (New) The method according to claim 33, wherein said step of etching includes introduction of said etchant into said epitaxy reactor.

35. (New) The method according to claim 34, wherein said N masking layers are hydrogen fluoride soluble masking layers, and wherein said etchant contains fluoride.

36. (New) The method according to claim 35, wherein said etchant comprises an unstable fluoride combination which disintegrates into hydrogen fluoride within said epitaxy reactor.

37. (New) The method according to claim 33, further comprising a step of initially cleaning said substrate within said epitaxy reactor by corrosion of any hydrogen fluoride soluble layers through introduction of at least one fluoride based compound.

38. (New) The method according to claim 31, wherein said at least one first semiconductor component is different from said at least one other semiconductor component.

39. (New) The method according to claim 38, wherein said at least one first semiconductor component is an electrical component and said at least one other semiconductor component is an optoelectronic component.

40. (New) The method according to claim 31, wherein said etchant comprises hydrogen fluoride.

41. (New) The method according to claim 31, wherein said N masking layers comprises masking layers having different thicknesses.

42. (New) The method according to claim 31, wherein said N masking layers comprises masking layers having different compositions.